

J. H. MORIN.

SHUTTLE.

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924,567.

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Fig. 1.

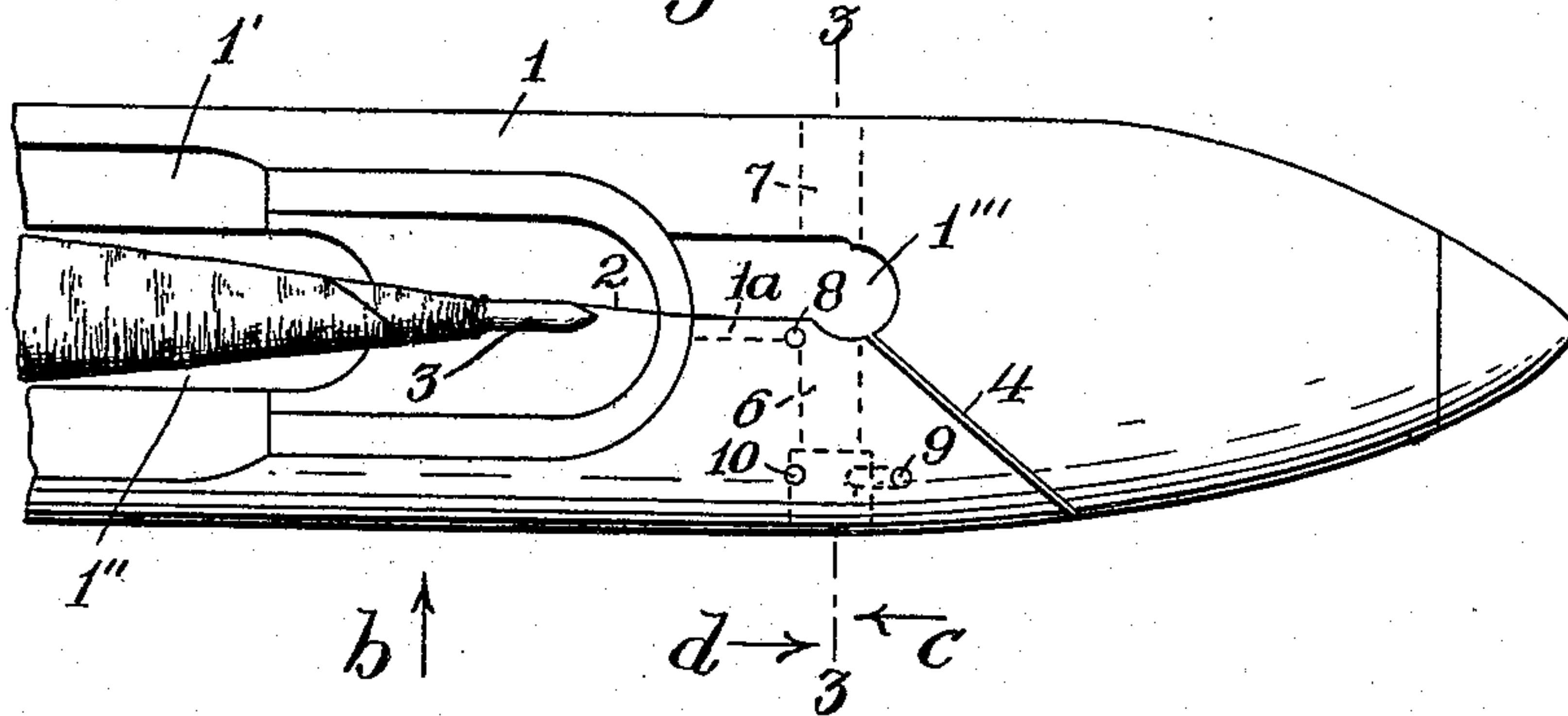


Fig. 2.

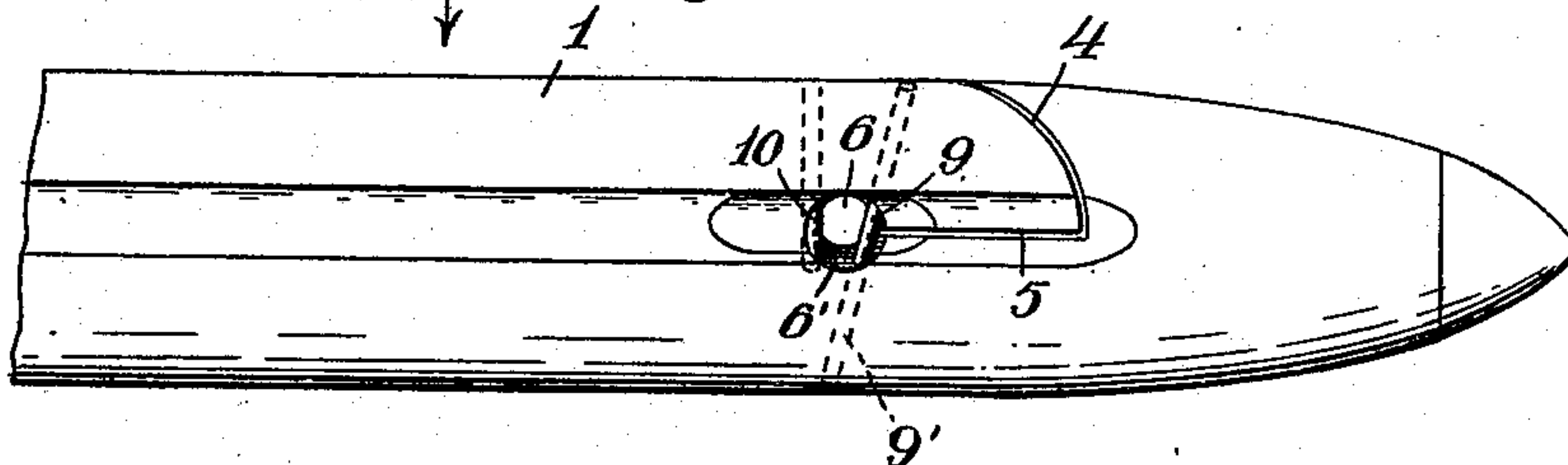


Fig. 3.

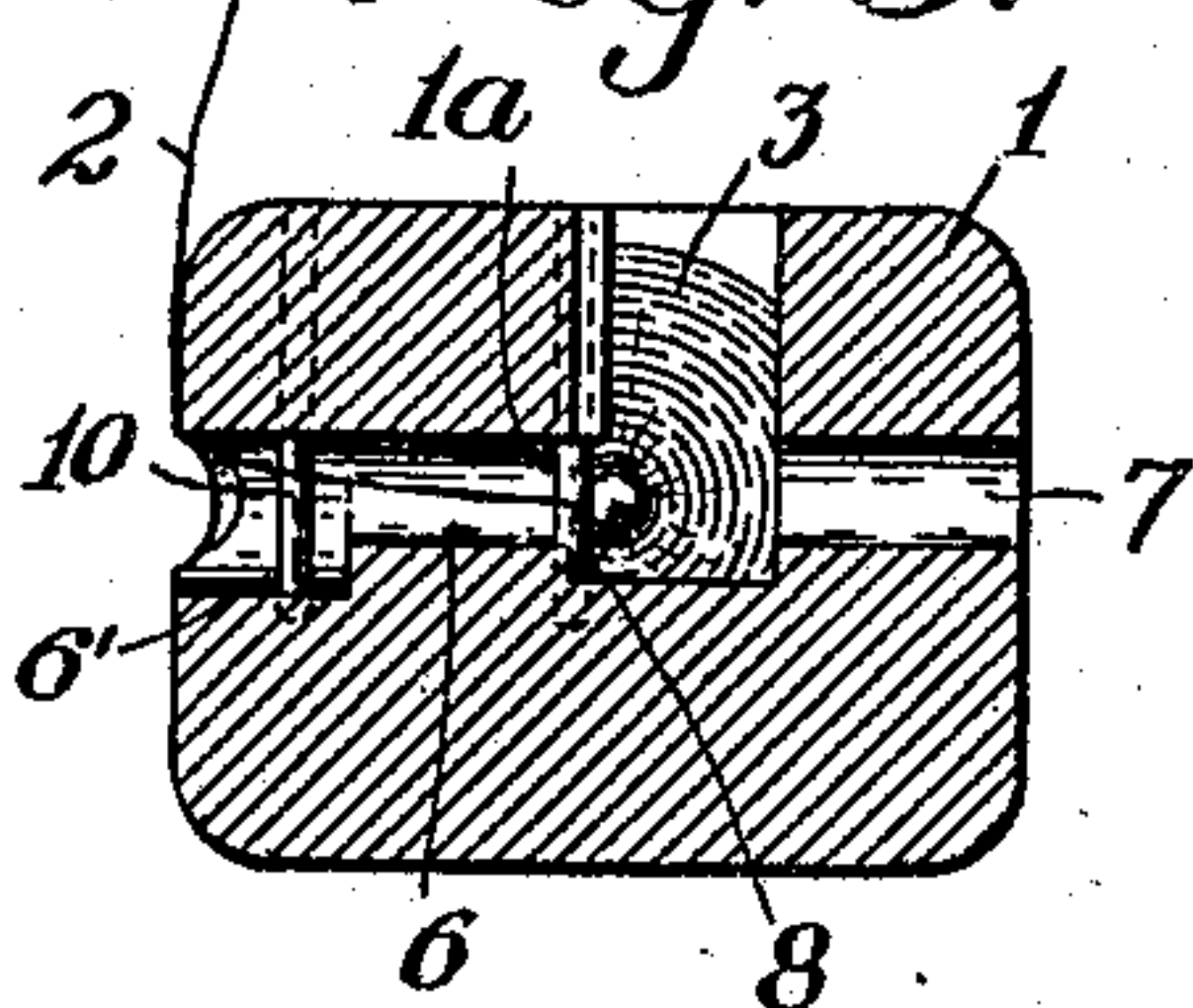
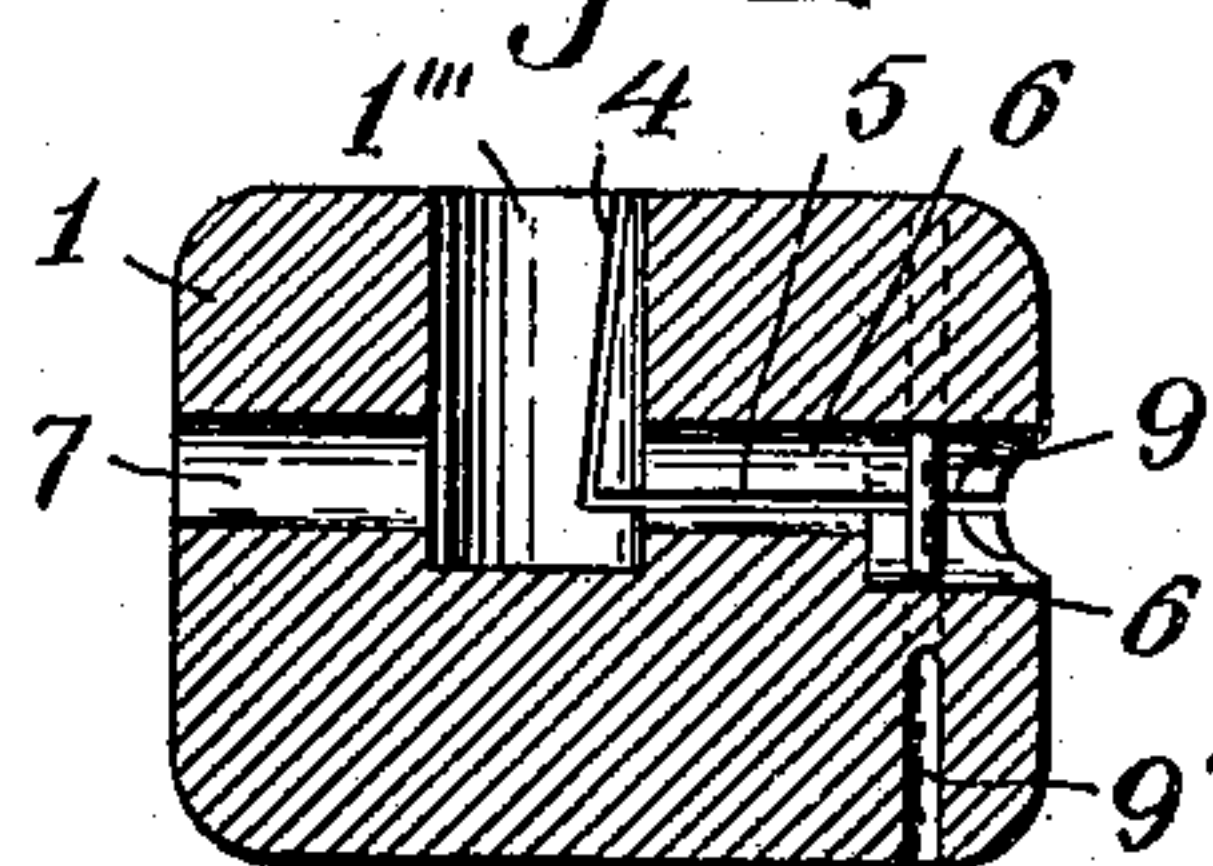


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## SHUTTLE.

No. 924,567.

Specification of Letters Patent.

Patented June 8, 1909.

Application filed April 6, 1908. Serial No. 425,429.

*To all whom it may concern:*

Be it known that I, JOSEPH H. MORIN, a citizen of the United States, residing at Millbury, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Shuttles, of which the following is a specification.

My invention relates to hand-threading loom shuttles, and to that class of hand-threading shuttles in which there is a guide-opening for the filling thread, through one side of the shuttle, near one end, and a slit or cut extending vertically in the shuttle body, leading from the throat of the shuttle to the outer edge thereof, and a second cut or slit extending horizontally through one side of the shuttle body, between the first mentioned cut and the filling thread guide-opening.

The object of my invention is to improve upon the construction of hand-threading shuttles of the class referred to.

In my improved hand-threading shuttle I preferably use three pins, preferably made of metal, one of which is located at the inner end of the filling thread guide-opening, and acts as a bearing or friction surface for the filling thread as it is drawn through said opening, and the other two pins are located near the outer end of said opening, one on one side thereof preferably extending in an inclined position, and with its lower end close to the lower edge of the outer end of the guide-opening and at the inner end of the horizontally extending slit or cut in the shuttle body, and the third pin, also preferably extending in a slightly inclined position, at the opposite side of the guide-opening, near its outer end, and forming a bearing surface for the filling thread, all as will be hereinafter fully described.

I have only shown in the drawing one end of a hand-threading shuttle of the class referred to, embodying my improvements, sufficient to enable those skilled in the art to understand the construction and operation thereof.

Referring to the drawing:—Figure 1 is a plan view of one end of a hand-threading shuttle embodying my improvements, looking in the direction of arrow *a*, Fig. 2. Fig. 2 is a side view of the parts shown in Fig. 1, looking in the direction of arrow *b*, Fig. 1. Fig. 3 is a section, on line 3, 3, Fig. 1, looking in the direction of arrow *c*, same figure. Fig.

4 is a section, on line 3, 3, Fig. 1, looking in the direction of arrow *d*, same figure.

In the accompanying drawing, 1 is a shuttle, having the central longitudinal chamber 1', with a central opening 1'' therethrough. Leading out of the central chamber 1' is the throat 1''' through which the filling thread 2, from the bobbin on the spindle 3, passes, in the usual way.

4 is a vertically extending slit or cut through the upper part of the shuttle body, leading into the throat 1''', and 5 is a horizontally extending slit or cut through the side of the shuttle body, leading into the vertically extending cut 4.

6 is a horizontal opening extending through the side of the shuttle body into the throat 1''', and forming the guide-eye or opening for the filling thread 2. On the opposite side of the shuttle is a second opening 7, in alignment with the opening 6, for the insertion of a wire or other device to clean out the lint or other material collected in the throat 1''', or in the guide-eye 6 of the shuttle.

The outer end of the guide-eye 6 for the filling thread, is preferably enlarged upon its lower surface, to form a surface or shoulder 6' within the guide-eye which is below the lower wall of the inner part of the thread-delivery eye 6. The throat 1''' is preferably undercut or recessed on one side, as shown at 1<sup>a</sup>, Fig. 3. At the outer end of the undercut or recessed portion 1<sup>a</sup> is a vertically extending pin 8, which is inserted in a hole previously made in the shuttle body, and extends preferably from the top of the shuttle body, with its lower end below the throat 1''', to form a bearing for the filling thread 2 to engage. At the outer end of the guide-eye 6 is a second pin 9, which is inserted in a hole previously made in the shuttle body, and extends from the top or upper side of the shuttle, preferably in an inclined position, with its lower part extending into the outer enlarged end of the guide-eye 6, and its lower end preferably pointed and extending closely adjacent to the lower wall of the outer enlarged end of the guide-eye 6. The pin 9 is located closely adjacent to the inner end of the horizontally extending cut 5, and intersects the plane thereof so that the filling thread 2, passing from the vertically extending cut 4 into the horizontally extending cut 5, and through said horizontally extending cut 5 will en-



gage the pin 9 and pass down along the lower part thereof and under the lower end thereof, into the guide-eye 6, and thus be threaded into said guide-eye.

5 The opening for the pin 9 is preferably extended through to the bottom of the shuttle, as shown by broken lines 9' in Fig. 2, so that a wire or similar device may be inserted to push out the pin 9 if desired. A third pin  
10 10 is preferably used, and extends at the outer enlarged end of the guide-eye 6, upon the opposite side thereof from the pin 9. The pin 10 is preferably slightly inclined and forms a bearing surface for the filling thread  
15 2, when the shuttle is moving in one direction.

From the above description in connection with the drawing, the operation of my improvements in hand-threading shuttles will  
20 be readily understood by those skilled in the art.

The filling thread 2 is drawn off from the spindle 3, and passed through the throat 1'', and drawn into the vertically extending slit  
25 4 and down into the horizontally extending slit 5, and through said horizontally extending slit 5, by the weaver, until it engages the pin 9, it will then pass down along the lower part of said pin and under the  
30 lower end thereof into the guide-eye 6.

By making the outer end of the guide-eye 6 of enlarged diameter at its lower part with the lower end of the guide pin 9 extending  
35 below the inner part of said guide eye, the filling thread 2 will be maintained above the lower end of the guide pin 9, and will not pass under said end to become unthreaded, and at the same time the inclination of the  
40 guide pin 9 acts to keep the filling thread 2 in its raised position. The undercut groove or recess 1<sup>a</sup> in one side of the throat 1''' of the shuttle, allows the thread to pass to one side of the throat proper, and keep in alinement with the spindle 3. To this end the pin 8 is  
45 located in line with the spindle 3 and in such a position, as shown in Fig. 1, as to hold the thread out of contact with the side wall of the throat at the undercut groove or recess 1<sup>a</sup>, so that the thread will be drawn against  
50 and around said pin and will therefore not have a bearing against the wood of the shuttle body either at the side wall of said undercut recess or at the side wall of the thread delivery guide eye, and thus the thread will  
55 not be chafed against said walls nor wear a groove or grooves in the wood, which is objectionable, in that when such grooves are worn the thread is liable to be broken.

Owing to the fact that the pin 9 is inclined  
60 inwardly toward the bottom of the wall or surface 6' of the enlarged part of the thread delivery guide eye, as shown in Fig. 2, the operation of threading the shuttle is more easily performed than if said pin were vertical; while the inclined position of said pin

tends to hold up the thread after it has been drawn into said eye, below the lower end of said pin, and when being delivered from said eye in the operation of the shuttle; so that the shuttle cannot possibly become acci-  
70 dentally unthreaded when in operation.

It will be understood that the details of construction of my improvements may be varied if desired.

Having thus described my invention, what  
75 I claim as new and desire to secure by Letters Patent is:—

1. A hand-threading loom shuttle having a throat for the passage of the filling thread, said throat having an undercut recess at  
80 one side, a thread delivery eye extending from said throat through the side of the shuttle, a pin located at the inner end of said thread delivery eye and at the outer end of said undercut recess and in the line of the  
85 spindle, said pin being so located as to prevent the thread from chafing with the wall at the side of said undercut recess, or with the wall of said thread-delivery eye, said shuttle having also a vertical slit extending  
90 from said throat to the side wall of the shuttle, a horizontal slit communicating with said vertical slit and with said thread delivery eye, and pins arranged near the outer  
95 end of said thread delivery eye and on opposite sides thereof, and one of which intersects the plane of said horizontal slit.

2. A hand-threading loom shuttle having a throat for the passage of the filling thread, a thread delivery eye extending from said  
100 throat through the side wall of the shuttle and enlarged or cut away at the lower side of its outer part, a vertical slit also extending from said throat through the side wall of the shuttle, a horizontal slit communicat-  
105 ing with said vertical slit and with said thread-delivery eye, a pin arranged at the inner end of said thread delivery eye, at said throat, and in such relation to said eye and throat as to prevent the thread from  
110 chafing against the side walls thereof as it is drawn outward from the shuttle, two pins arranged on opposite sides of the outer part of said thread delivery eye, and one of which is closely adjacent to the inner end of said  
115 horizontal slit and intersects the plane thereof, said pin extending from above downward to a point closely adjacent to the lower wall of said enlarged portion of said delivery eye.

3. A hand-threading loom shuttle having  
120 a throat for the passage of the filling thread, a thread delivery eye extending from said throat through the side wall of the shuttle and enlarged or cut away at the lower side of its outer part, a vertical slit also extending  
125 from said throat through the side wall of the shuttle, a horizontal slit communicating with said vertical slit and with said thread-delivery eye, a pin arranged at the inner  
130 end of said thread delivery eye, at said



throat, and in such relation to said eye and throat as to prevent the thread from chafing against the side walls thereof as it is drawn outward from the shuttle, two pins arranged  
5 on opposite sides of the outer part of said thread delivery eye, and one of which is closely adjacent to the inner end of said horizontal slit and intersects the plane thereof, said pin extending from above  
10 downward to a point closely adjacent to the lower wall of said enlarged portion of said delivery eye, and said pin being inclined inwardly toward the bottom of said enlarged portion of said eye, to facilitate  
15 threading the shuttle and to prevent accidental unthreading thereof.

4. A hand-threading loom shuttle having a throat for the passage of the filling thread, said throat having an undercut recess at  
20 one side, a thread delivery eye extending from said throat through one side wall of the shuttle and an opening or passage ex-

tending from said throat through the opposite side wall of the shuttle and registering with said thread-delivery eye, a pin 25 located at the inner end of said thread delivery end and at the outer end of said undercut recess and in the line of the spindle, said pin being so located as to prevent the thread from chafing with the wall at the side 30 of said undercut recess, or with the wall of said thread delivery eye, said shuttle having also a vertical slit extending from said throat to the side wall of the shuttle, a horizontal slit communicating with said 35 vertical slit and with said thread delivery eye, and pins arranged near the outer end of said thread delivery eye and on opposite sides thereof, and one of which intersects the plane of said horizontal slit.

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Witnesses:

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